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ABSTRACT

More than one-fifth of American school-age children and youth come from language-minority families--homes in which languages other than English are spoken. This volume, the last in a series of three, describes the research design and methodology for a study that examined exemplary school-reform efforts involving the education of limited English-proficient (LEP) students. The study focused on language arts in grades 4 through 6 and mathematics and science in grades 6 through 8. Researchers visited eight schools with exemplary approaches to the education of language-minority students. Selected through a nomination process, telephone screening, the schools represent diversity in geographic location, grade level structure, and native language of LEP students. During the site visits, researchers conducted interviews with teachers, support staff, and administrators; held focus group meetings with students and parents; and observed classroom activities. A total of 13 tables, 1 figure, and a list of nominators are included. (LMI)

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SCHOOL REFORM AND STUDENT DIVERSITY

VOLUME III
TECHNICAL APPENDIX:
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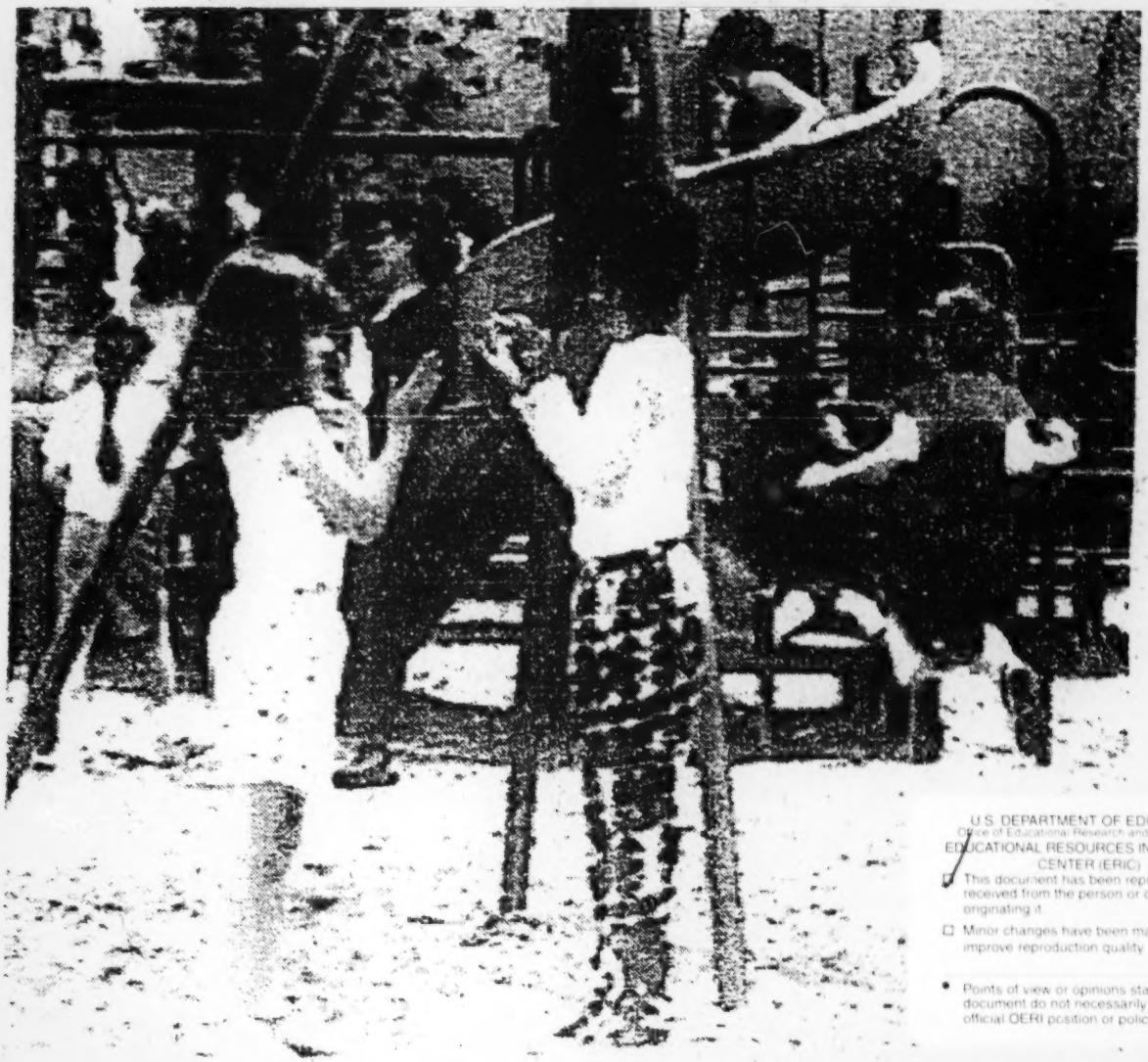

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School Reform and Student Diversity

Volume III
Technical Appendix:
Research Design and Methodology

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A. PREFACE

Children who come from cultural and linguistic minority backgrounds often founder in American schools. Many do not gain a solid grounding in English reading and writing or in mathematics and science by the time they enter high school. As young adults they are inadequately prepared for higher education or for all but the most menial employment.

This situation is unacceptable. The challenge of educating language minority students to the high standards we expect of all children is not well understood. It is nonetheless clear that little progress will be made unless the educational and organizational practices at many of today's public schools are reformed.

In 1990, the Office of Educational Research and Improvement (OERI) of the US Department of Education issued an RFP to identify and study exemplary school reform efforts involving the education of language minority students. The RFP directed the study to focus on language arts in grades 4 through 6 and math/science in grades 6 through 8. It is neither desirable nor possible to separate the LEP program at these grade levels from the entire experience of students at a school Therefore, the study analyzes the context of school reform and how that school reform affects the entire curriculum and program of instruction for LEP students.

This document, *Volume III: Technical Appendix*, presents the research design and methodology of the Student Diversity Study. It is part of a set of three reports on the project. *Volume I: Findings and Conclusions* presents the major findings of the study, a literature review, summary of methodology, case study summaries, a cross site analysis and policy and research implications emerging from the study. Detailed case studies on eight exemplary schools are presented in *Volume II: The Case Studies*. The study also commissioned research papers, which have been edited and published as a book, *Language and Learning: Educating Linguistically Diverse Students* (Beverly McLeod, editor, SUNY Press, 1994).

OERI has funded eleven other companion studies that examine different aspects of school reform. The entire set of reports will thus provide a comprehensive description and analysis of reform from the empirical perspective of outstanding practices in the field.

B. ACKNOWLEDGMENTS

The generous hospitality, cooperation, and patience of the teachers, principals, staff, students, and parents at each of our case study schools made this research possible. We would like to thank those who welcomed us into their school community for opening their doors to our team of researchers. We came away from each visit deeply impressed by the unfailing commitment that teachers, principals, and staff have made to improving the education and overall well-being of their students and their families. We have been inspired by their creative approaches to confronting and overcoming the many challenges they face as they work steadily toward this goal. Their optimistic outlook and perseverance will serve as an inspiration to all school professionals as they face very similar challenges.

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E. RESEARCH DESIGN

The goal of the Student Diversity Study was to identify and describe exemplary school reform efforts for language minority students in grades 4 through 8 in three curricular areas: language arts, science, and mathematics. The focus on language arts curriculum is directed at grades 4 through 6 and the focus on mathematics and science curriculum is in grades 6 through 8. The study team identified and described eight exemplary schools which offer state-of-the-art curriculum and instruction in one or more of the three curricular areas in a restructured school. The goal was to synthesize elements of models of exemplary programs. More specifically, this research identified theory-based and practice-proven models to effectively teach language arts, math, and science to students from linguistic and cultural diverse backgrounds. These models enable educators to help such students overcome the linguistic, cognitive, and social psychological barriers that prevent them from achieving to their full potential.

While limitations of study resources made it impossible to include sites which represent a wide range of contexts (such as demography, geographic region, and language mix), schools were selected to reflect a variety of contexts. Schools selected for the study demonstrated innovative, high quality curriculum in a reformed school context, as well as excellent language development programs for LEP students. In addition, case study sites implemented innovative school reform approaches beyond the standard observed in excellent but otherwise traditional school settings.

Areas of Inquiry

The RFP identified three areas for specific inquiry for this study:

1. *Design* of effective instructional strategies for culturally and linguistically diverse students;
2. *Implementation* of those strategies under various conditions; and
3. *Impact* of those strategies on students.

The research team developed a series of Analysis Questions that address each of these three areas of inquiry. The three areas of inquiry and the corresponding Analysis Questions are presented below.

Tables E-1 through E-3 match the Analysis Questions with the data sources or analytical approaches that address each question. The data sources or analytical approaches, which are described more fully in the remainder of this document, are literature review, commissioned papers, site selection, case studies, and cross-site analysis. Please notice that the analysis

questions listed in the table will be addressed using a variety of different data sources or analytical approaches. A later section focuses on the central data source, the case studies, and presents case study questions for addressing these areas of inquiry.

1. Design. Research into the design of effective instructional strategies required the research team to identify, examine, analyze, evaluate, and describe these practices as they are exhibited in exemplary schools and classrooms. Table E-1 lists a series of revised Analysis Questions related to program design and matches them with the data sources or analytical approaches that address the analysis questions.

2. Implementation. Many reforms and models fail live up to their promise when implemented under the real conditions of American schools. Consequently, the study will identify exemplary practices that have been implemented and demonstrated their effectiveness over a period of time. Our field investigations will focus on uncovering factors and conditions that helped bring the program into being or had to be overcome to achieve success. Table E-2 presents Analysis Questions about implementation of reform along with the data sources or analytical approaches that informed the questions.

3. Impact. A major challenge for this research was to collect data about how new instructional approaches affect student learning and other measures of the program's impact. The duration of this research project was too short, and the budget was too limited, to conduct a longitudinal study of student outcomes. Moreover, we were pessimistic about the possibility of gathering data to allow comparison of student outcomes across sites for several reasons. LEP student test scores often are hard to come by in schools and are generally not comparable across sites because LEP students are often not given the standardized tests that districts or states require of most students. The transiency and mobility of LEP students is another factor that makes comparable data very difficult to obtain. Therefore, the study could not demonstrate quantitatively that the eight case study sites are exemplary in the sense of demonstrated evidence of significantly higher student achievement scores. Nevertheless, the nomination, screening, and field visits all led to the conclusion that these schools were highly innovative and followed practices that are considered by researchers to provide outstanding learning opportunities for LEP—and all—students. Table E-3 lists Analysis Questions about both student and program outcomes.

Table E-1
Analysis Questions Related to Design

Analysis Questions	Data Sources or Analytical Approaches				
	Literature Review	Commissioned Papers/ National Conference	Site Selection	Case Studies	Cross-site Analysis
1. Do cooperative and group strategies foster the learning of LEP and formerly LEP students, especially in math and science?	X			X	
2. How important are opportunities for instructional discourse to LEP and formerly LEP students?	X	#3		X	
3. What characteristics of effective language arts, math, and science programs are common across exemplary sites?	X	#7, #8, #9		X	X
4. In mathematics, how are higher order thinking skills developed in exemplary programs?	X	#8	X	X	X
5. In science, how do exemplary programs provide hands-on experiential opportunities for learning science?	X	#9	X	X	X
6. What are effective practices in teaching English writing to LEP students?	X	#6, #7	X	X	X
7. How are the social and cultural contexts (e.g., traditions, norms, values, and aspirations) of linguistically and culturally diverse students drawn upon in exemplary programs?		#4, #5	X	X	X
8. What are the characteristics of successful models that incorporate student culture when there are multiple and diverse cultures represented in a school?		#5		X	X
9. How do successful programs structure the articulation of curriculum and instructional strategies between elementary and middle schools and middle schools and high schools?			X	X	
10. How do successful programs ease the transition from elementary school to intermediate school or from intermediate school to high school for culturally and linguistically diverse students?			X	X	
11. What are the characteristics of effective transition programs for LEP students in grades 4-6?		#6	X	X	X
12. Do exemplary transition programs serving students who continue to develop their primary language literacy skills in grades 4-6 differ systematically from exemplary transition programs in which students do not continue to develop primary language literacy in grades 4-6?		#6	X	X	X

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Table E-2
Analysis Questions Related to Implementation

Analysis Questions	Data Sources or Analytical Approaches				
	Literature Review	Commissioned Papers/ National Conference	Site Selection	Case Studies	Cross-site Analysis
1. What factors helped to initiate, develop, and sustain the reform?	X		X	X	X
2. What were the incentives for the reform?	X		X	X	
3. What barriers were encountered and how were they overcome?	X		X	X	
4. How do diverse conditions of demography affect implementation?	X		X	X	X
5. What is the history of reform efforts in the district?			X	X	
6. What are the prevailing community attitudes toward educating linguistically and culturally diverse students?			X	X	X
7. How is the school organized, governed, and managed? What is the school context for implementation of reform?			X	X	X
8. How is the reform program staffed? What is the training and preparation of the staff?			X	X	
9. How do the schools or districts recruit, hire, and retain appropriate staff for the program?			X	X	X
10. What is the impact of differences in the nature of the cultural and linguistic minority population—whether immigrant, migrant, or second generation?			X	X	
11. How do reform programs differ from previous practice in that school or district?			X	X	
12. What resources, both human and financial, were required to develop, implement, and sustain the reform program?			X	X	X
13. How was research and research-based information applied in the reform program?			X	X	X
14. What policies and practices at the federal, state, district, and school level helped or hindered reform?	X		X	X	X

Table E-3
Analysis Questions Related To Impact

Analysis Questions	Data Sources or Analytical Approaches				
	Literature Review	Commissioned Papers/ National Conference	Site Selection	Case Studies	Cross-site Analysis
1. How do reform programs assess their own progress in improving student learning?	X		X	X	X
2. Do schools have evidence that student learning outcomes improved?	X		X	X	X
3. What is the overall assessment of the program, its strengths and weaknesses?			X	X	X
4. How can assessments be used to refine reforms?			X	X	X
5. What are the anticipated and unanticipated benefits derived from and difficulties encountered in the implementation of reform programs?			X	X	X
6. What was the role of research, research-based knowledge, and other information in program assessment?	X		X	X	X

Design of Research Activities

This section discusses the design of the study's four principle research activities: 1) literature review, 2) commissioned papers and national conference, 3) site selection, and 4) case studies. The methodology employed for the site selection, cases studies, and cross-site analysis is described in the subsequent section entitled Methodology.

1. Literature Review. The research team conducted an extensive review of the literature for the study. The review has four main foci: 1) Strategies for teaching culturally and linguistically diverse populations, including cooperative and group learning activities and instructional conversation; 2) Second language acquisition and language arts instructional strategies especially for upper elementary grades; 3) Science and math instructional strategies, particularly at the middle school level; 4) Theory and practice of school reform. Project staff have examined the mainstream literature in these areas, as well as reports produced but not published by ongoing research projects and publications by individual school districts.

The literature review served as a crucial underpinning of our examination of the research questions posed by the study. Additionally, the literature review served as input to the criteria for the selection of sites for the case studies. Finally, the literature review provided important information that informed the team's assessment of the impact of reform activities in the area of education of culturally and linguistically diverse students.

2. Commissioned Papers and National Conference. The research papers commissioned for this study advanced the study's work by exploring critical issues in the relationship between school reform and improvement of educational outcomes for linguistically and culturally diverse students. The papers were reviewed at the national conference by researchers, policymakers, and practitioners. Through the papers and conference proceedings, the study team gained insight from national experts that informed the site selection, data collection, and data analysis processes. The research papers were edited and published by the State University of New York Press as *Language and Learning: Educating Linguistically Diverse Students* (1994). The paper titles and authors follow.

Education Reform

- *Linguistic Diversity and Academic Achievement*, Beverly McLeod
- *The Impact of the Education Reform Movement on Limited English Proficient Students*, Patricia Gandara
- *The Role of Discourse in Learning, Schooling, and Reform*, Hugh Mehan

Culture and Learning

- *The Value of a Multicultural Education for All Students*, Christine E. Sleeter
- *Research Knowledge and Policy Issues in Cultural Diversity and Education*, Roland Tharp

Language and Literacy

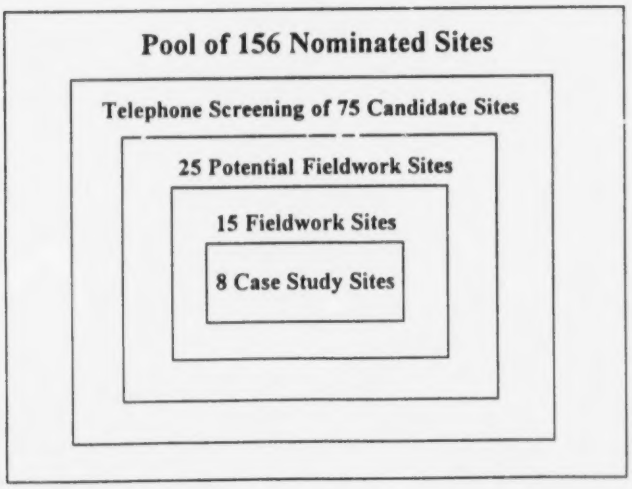
- *First and Second Language Literacy in the Late Elementary Grades*, Barry McLaughlin
- *Teaching Strategies: Their Possibilities and Limitations*, Lilia I. Bartolome

Math and Science

- *A Communication Framework for Mathematics: Exemplary Instruction for Culturally and Linguistically Diverse Students*, Mary E. Brenner
- *Language Diversity and Science Learning: The Need for a Critical System of Meaning*, Alejandro J. Gallard and Deborah J. Tippins

3. Site Selection. The study team viewed the site nomination process both as a method of identifying sites for case studies but also as an additional source of data on exemplary programs for LEP students. Figure 1 represents in graphic form the study team's design for site selection which involves five stages: identification of a pool of nominees, initial paper screening, in-depth telephone screening to narrow pool of potential fieldwork sites, selection of preliminary fieldwork sites, and selection of case study sites. Each of these stages are described in detail in Section F, Methodology under the header Sample Selection.

Figure E-1
The Sample Design


Pool of 156 Nominated Sites
Telephone Screening of 75 Candidate Sites
25 Potential Fieldwork Sites
15 Fieldwork Sites
8 Case Study Sites

4. Case Studies. The heart of the research activities was the case studies. The following material describes our approach to the case studies, details the research questions that provide a framework for the field instruments and cross-walks these research elements to the analysis questions presented in the preceding section.

The case study research design included state, district, and school interviews, focus groups discussions, classroom observations, school observations, and a document collection. Fieldwork staff used these sources to gather data on a series of research questions. The fieldwork research questions are contained on the following pages. They have been organized around five Case Study Research Questions:

1. *What is the context for reform?*
2. *What is the design of the reform and how is it implemented?*
3. *What is the role of research-based information on the reform?*
4. *What resources are required for the reform?*
5. *What is the impact of the reform?*

These five Case Study Research Questions are derived from the three Areas of Inquiry and Analysis Questions discussed above. It proved to be convenient to reorganize the questions for the purpose of the case study work and the design of the case study instruments. Table E-4 displays the crosswalk between the Case Study Research Questions and the Analysis Questions (shown in Tables E-1, E-2, and E-3).

The case study instruments were designed using a three step procedure. First, we operationalized each Case Study Research Question into a range of data elements that, taken together, would answer the Research Question. Second, we cross checked these operational data elements with the Analysis Questions to make sure that the data collected would address the Analysis Questions. Third, for each operational data element, we developed specific items for the Data Collection Instruments. Tables E-5 through E-9 display the results of these steps. These tables show that each Case Study Research Question has been elaborated with Sub-Research Questions that appear in the left column of the table; the middle column contains Operational Elements for Data Collection about which the team collected data during the fieldwork. The column on the right shows the corresponding data source that was used to gather the information regarding each Operational Element.

Table E-4
Crosswalk of Case Study Research Questions and Analysis Questions Related to Design, Implementation, and Impact

Case Study Research Questions	Corresponding Analysis Questions
1. **What is the context for reform?** What factors helped to initiate, develop, and sustain reform? What were the major barriers to reform and how were they overcome? What are unique programmatic and demographic conditions?	**1. Design:** 8-10 **2. Implementation:** 1-6, 10, 11, 14
2. **What is the design of the reform and how is it implemented?** *Restructuring:* What elements of restructuring are in place? How is the program organized and governed? How is the program staffed? How are children grouped for instruction? *Curriculum:* What type of curriculum is used? How is it integrated across content areas? How is it developed? *Language Acquisition Strategies:* What strategies are used for language acquisition? How does the program build on the cultures of the students?	**1. Design:** 1-12 **2. Implementation:** 4, 7-9
3. **What is the role of research-based information on the reform?** What has been the role of research and research-based information in designing, implementing, and evaluating the reform? the language acquisition strategies? the curriculum?	**2. Implementation:** 13 **3. Impact:** 6
4. **What resources are required for the reform?** What were the sources of financial support for the program: federal, state, local, or private? What is the approximate cost of the reform: development, operation, evaluation, and training?	**2. Implementation:** 12
5. **What is the impact of the reform?** What has been the approach to assessing the student learning outcomes from the reform? What are the results of the assessment? What are the strengths and weaknesses of the reform?	**3. Impact:** 1-6

Table E-5
Crosswalk between Case Study Research Question #1 and Data Sources
Case Study Research Question #1: What Is The Context for Reform?

Sub-Research Questions	Operational Elements for Data Collection	Corresponding Data Sources
What factors helped to initiate, develop, and sustain reform? What were the major barriers to reform and how were they overcome? What are unique programmatic and demographic conditions?	A. Impetus for and history of restructuring	State Director of Second Languages Interview Assistant Superintendent Interview District Second Language Director Interview District Curriculum Director Interview Principal Interview
	B. Leadership in reform movement	State Director of Second Languages Interview Assistant Superintendent Interview District Second Language Director Interview District Curriculum Director Interview Principal Interview Teacher Interview External Partner Interview
	C. Incentives for reform	State Director of Second Languages Interview Assistant Superintendent Interview Principal Interview
	D. Policies and funding priorities related to reform	State Director of Second Languages Interview District Curriculum Director Interview Principal Interview
	E. Efforts toward improving curriculum and instruction in language arts, math, and/or science	State Director of Second Languages Interview Assistant Superintendent Interview District Second Language Director Interview District Curriculum Director Interview Principal Interview Teacher Interview
	F. Demographic and economic conditions affecting the reform	Assistant Superintendent Interview District Second Language Director Interview Principal Interview Document Checklist
	G. Desegregation policies affecting the reform	State Director of Second Languages Interview District Second Language Director Interview Principal Interview Document Checklist
	H. Role and attitudes of school staff toward the reform	Principal Interview Teacher Interview
	I. Role of external partners in the reform	Assistant Superintendent Interview Principal Interview Teacher Interview External Partner Interview
	J. Federal, state, and district role in the reform	State Director of Second Languages Interview Assistant Superintendent Interview District Second Language Director Interview District Curriculum Director Interview Principal Interview External Partner Interview
	K. Parent and community involvement in the reform	Principal Interview Teacher Interview District Second Language Director Interview

Table E-6
Crosswalk between Case Study Research Question #2 and Data Sources
Case Study Research Question #2:
What Is the Design of the Reform and How Is It Implemented?

Sub-Research Questions	Operational Elements for Data Collection	Corresponding Data Sources
Restructuring: *What elements of restructuring are in place? How is the program organized and governed? How is the program staffed? How are children grouped for instruction?*	A. Organization of teaching (e.g., team teaching)	District Curriculum Director Interview Principal Interview Teacher Interview
	B. Use of time	District Second Language Director Interview District Curriculum Director Interview Principal Interview Teacher Interview
	C. Governance structure	District Curriculum Director Interview Principal Interview Teacher Interview Parent Focus Group Protocol Document Checklist
	D. School climate	Student Focus Group Protocol School Observation Document Checklist
	E. Integrated services	Principal Interview Parent Focus Group Protocol School Observation
	F. Leadership	District Second Language Director Interview Principal Interview Teacher Interview Parent Focus Group Protocol External Partner Interview School Observation
	G. Modifications to physical environment to support school organization	School Observation
	H. Student placement policies and practices	District Second Language Director Interview Principal Interview
	I. Student grouping within classroom	Teacher Interview
	J. Classroom instructional approaches	Teacher Interview Student Focus Group Protocol
	K. Teacher and administrator qualifications	District Second Language Director Interview Principal Interview Teacher Interview
	L. Staff development policies and practices	District Second Language Director Interview Assistant Superintendent Interview District Curriculum Director Interview Principal Interview Teacher Interview
	M. Use of paraprofessionals	District Second Language Director Interview Principal Interview Teacher Interview

Table E-6 (cont.)

Sub-Research Questions	Operational Elements for Data Collection	Corresponding Data Sources
Restructuring *(cont.)*	N. Role of external partner in program organization	Principal Interview Teacher Interview External Partner Interview School Observation
Curriculum*: What type of curriculum is used? How is it integrated across content areas? How is it developed?*	O. Language arts, math, and/or science curriculum	Assistant Superintendent Interview District Second Language Director Interview District Curriculum Director Interview Principal Interview Teacher Interview Student Focus Group Protocol
	P. Integrated curriculum	District Curriculum Director Interview Principal Interview Teacher Interview
	Q. Use of instructional technology	Principal Interview Teacher Interview Student Focus Group Protocol School Observation
	R. Role of external partner in curriculum development and instruction	District Curriculum Director Interview Principal Interview Teacher Interview External Partner Interview
Language Acquisition Strategies*: What strategies are used for language acquisition? How does the program build on the cultures of the students?*	S. Language acquisition strategies	District Second Language Director Interview Principal Interview Teacher Interview
	T. Approach to transition to English	District Second Language Director Interview Principal Interview Teacher Interview
	U. Language use in classroom	District Second Language Director Interview Principal Interview Teacher Interview Parent Focus Group Protocol Student Focus Group Protocol
	V. Instructional practices for recent immigrants	District Second Language Director Interview Principal Interview Teacher Interview
	W. LEP student designation policies and procedures	District Second Language Director Interview Principal Interview
	X. Parent and community involvement	District Second Language Director Interview Principal Interview Teacher Interview Parent Focus Group Protocol School Observation
	Y. School efforts to validate students' culture	Principal Interview Teacher Interview Parent Focus Group Protocol School Observation Document Checklist
	Z. School and classroom physical environment	School Observation Classroom Observation

Table E-7
Crosswalk between Case Study Research Question #3 and Data Sources
Case Study Research Question #3:
What Is the Role of Research-based Information in the Reform?

Sub-Research Questions	Operational Elements for Data Collection	Corresponding Data Sources
What has been the role of research and research-based information in designing, implementing, and evaluating the reform? the language acquisition strategies? the curriculum?	A. Research on instructional approach	Principal Interview
	B. Research on organization of teaching (e.g., team teaching)	Principal Interview
	C. Research on use of time	Principal Interview
	D. Research on assessment	Principal Interview District Evaluation Director Interview
	E. Research on language acquisition strategies	Principal Interview District Second Language Director Interview
	F. Research related to student placement and grouping	Principal Interview District Second Language Director Interview
	G. Research on language arts, math, and/or science curriculum	Principal Interview District Curriculum Director Interview
	H. External partners' research base	External Partner Interview

Table E-8
Crosswalk between Case Study Research Question #4 and Data Sources
Case Study Research Question #4: What Resources Are Required for the Reform?

Sub-Research Questions	Operational Elements for Data Collection	Corresponding Instruments (Question Numbers)
What were the sources of financial support for the program: federal, state, local, or private? What is the approximate cost of the reform: development, operation, evaluation, and training?	A. Funding policies for LEP student programs	State Director of Second Languages Interview Assistant Superintendent Interview District Second Language Director Interview District Business Officer Interview Principal Interview Document Checklist
	B. Resources for LEP student programs	District Second Language Director Interview District Business Officer Interview Principal Interview Document Checklist
	C. Language arts, math, and/or science program policies, funding priorities, and resources	State Director of Second Languages Interview Assistant Superintendent Interview District Curriculum Director Interview District Business Officer Interview Principal Interview Document Checklist
	D. Assessment policies, funding priorities, and resources	District Evaluation Director Interview District Business Officer Interview Principal Interview Document Checklist
	E. Staffing policies, funding priorities, and resources	District Business Officer Interview Principal Interview Document Checklist
	F. Instructional material policies, funding priorities and resources	District Curriculum Director Interview District Business Officer Interview Principal Interview Document Checklist
	G. Instructional technology policies, funding priorities, and resources	District Curriculum Director Interview District Business Officer Interview Principal Interview Document Checklist
	H. External funding	District Business Officer Interview Principal Interview Document Checklist External Partner Interview

Table E-9
Crosswalk between Case Study Research Question #5 and Data Sources
Case Study Research Question #5: What Is the Impact of the Reform

Sub-Research Questions	Operational Elements for Data Collection	Corresponding Data Sources
What has been the approach to assessing the student learning outcomes from the reform? What are the results of the assessment? What are the strengths and weaknesses of the reform?	A. Student assessment policies	State Director of Second Languages Interview District Curriculum Director Interview District Evaluation Director Interview Principal Interview Document Checklist
	B. Student assessment methods and strategies	District Curriculum Director Interview District Evaluation Director Interview Principal Interview Teacher Interview Document Checklist
	C. Student assessment linked to student outcomes	District Curriculum Director Interview District Evaluation Director Interview Principal Interview Teacher Interview Document Checklist
	D. Student attendance	Principal Interview Document Checklist
	E. Student academic performance	Document Checklist
	F. Student suspensions and expulsions	Document Checklist
	G. Program evaluation	District Evaluation Director Interview Principal Interview External Partner Interview Parent Focus Group Student Focus Group Document Checklist
	H. LEP Student Redesignations	District Second Language Director Interview Principal Interview Document Checklist
	I. Strengths and weaknesses of the language acquisition strategies	State Director of Second Languages Interview District Second Language Director Interview Principal Interview Teacher Interview Parent Focus Group
	J. Strengths and weaknesses of the language arts, math, and/or science curriculum	Assistant Superintendent Interview District Curriculum Director Interview Principal Interview Teacher Interview Parent Focus Group
	K. Strengths and weaknesses of the restructured environment	Principal Interview Teacher Interview

F. METHODOLOGY

This section discusses the methodology used in the Student Diversity Study. The methods used in sample selection, data collection in the intensive case study visits, and cross-site analysis are described.

Sample Selection

Site Nomination Process. The team began the process by identifying a pool of nominations which involved four stages: 1) contacting key informants, 2) developing a comprehensive list of nomination sources, 3) contacting those sources, and 4) following up as necessary. Study team members spoke by phone and in person with a group of key informants, researchers and practitioners from across the country and asked for advice on particular sites, on others to contact, and on the state of the art in schools and districts. The study team developed a large list of potential sources in the following categories to contact for nominations.

- Directors of Federally-funded Centers
- Advisors to the National Center for Research on Cultural Diversity and Second Language Learning
- Curriculum Groups and Associations (National Association of Bilingual Education, Center for Applied Linguistics, etc.)
- Project Advisors
- State Second Language Directors (in the 10 states with the largest LEP population[1])
- Commissioned Paper Authors
- School District Second Language Directors (in districts with high concentrations of LEP students)
- National Diffusion Network Coordinators (in 20 states with the highest concentration of LEP students)
- Individuals Suggested by Key Contacts
- Presenters at the California Association of Bilingual Education and National Association of Bilingual Education conference with relevant topics
- State Title VII Directors (in all states)

[1] These state are Arizona, California, Florida, Illinois, Massachusetts, New Jersey, New Mexico, New York, Pennsylvania, and Texas.

A letter describing the project, outlining the types of sites we sought was sent to those in each of the above mentioned groups. A nomination form was included with each letter. A total of 350 letters were mailed. In addition, nomination forms were distributed to participants at the project's national conference. State staff were asked to identify key individuals in universities who train bilingual teachers, intermediate units who do teacher training, districts with innovative programs and other key contacts.

Staff placed follow up calls to state second language directors in the 20 states with the largest LEP population, project advisors, paper authors, and to selected members of other groups. In some cases, informants nominated actual sites while in other cases we were given the name of district or others to contact for further information. Staff also phoned districts and other informants identified in this manner to solicit the names of schools with exemplary programs. The yield from roughly six months of intensive mail and phone contact was about 156 schools. Some of the schools were nominated for language arts, some for science, and some for mathematics. It was common for schools to be nominated for more than one curricular area. Table F-1 shows the number of schools nominated during site selection and the number identified by subject matter area. Schools could be nominated for more than one curricular area.

This process was quite successful in identifying language arts sites but worked less well as a mechanism for identifying mathematics and science sites. The team relied on sources intimately familiar with a site for nominations for mathematics and science programs. Researchers often had to find a university center or other organization working to develop innovative mathematics and science curriculum in order to identify appropriate sites. The team also identified and contacted funding sources—such as the Eisenhower Mathematics and Science Education program—for names of sites with large populations of LEP students.

The project's research design called for the team to complete the nomination process in the fall of 1992 and conduct the initial fieldwork during the spring of 1993. In September 1992, during the process of site selection, the project staff received a stop-work notification from the Department of Education. Nine months later, in July 1993, the project was reinstituted by the Department of Education. The delay caused the project to lose some of the positive momentum that had been built and required that staff again create a sense of excitement in the field for the study and the benefits of participating. The stop-work order also interrupted the site selection process and delayed it by more than the actual nine months of the work stoppage. In July, schools were closed and staff was unable to resume the site selection process until late in September 1993. At that point, staff had to make additional calls to many schools we had spoken to earlier and to call again many experts who had provided nominations.

Table F-1
Nominated Sites By State and Subject Area

State	Language Arts	Mathematics	Science	Total Schools
Alaska	2	0	0	2
Arizona	4	1	4	8
California	31	17	19	58
Colorado	1	1	1	1
District of Columbia	3	0	0	3
Florida	3	3	5	6
Illinois	4	0	1	4
Maryland	4	2	2	8
Massachusetts	8	5	6	11
Michigan	3	0	0	3
Nevada	5	0	2	5
New Mexico	2	2	2	4
New York	9	4	4	11
North Carolina	3	1	1	4
Ohio	2	1	1	2
Texas	7	4	9	18
Utah	0	4	0	4
Virginia	0	2	0	2
Wisconsin	2	0	0	2
Total	93	47	57	156

Selection Criteria. The next step in the process was to narrow the pool of 156 nominated sites to locate those that seemed to best fit the study criteria. Six selection criteria were established for exemplary sites; the selection criteria were developed with the assistance of the study advisors.

Three selection criteria relate to the *philosophy* of school practices for language minority students.

1. ***Innovation***: The school alters traditional practices where necessary to serve the needs of language minority students. There is an excitement about the school both inside and outside.

2. ***Embedded***: The practices for language minority students are not isolated, but are a part of the entire school program and are articulated with the type of practices used in earlier and later grades. In practice this means that the program is not limited to one teacher or one grade level. The program spans more than one grade level. The program is part of larger commitment to educating language minority students.

3. ***High Expectations for LEP Students***: the school's administrators and teachers have embraced and can articulate the philosophy of the program and share with parents and other community members a vision of a quality education for language minority students. The staff demonstrate an understanding of the societal context within which language minority students live and learn, and recognize the unique situations, challenges, and strengths of their students.

Two criteria relate to *implementation* of the program.

4. ***Longevity***: the school's use of the identified practices is a serious long term effort. In practice, the school's program should have been in effect for two to three years.

5. ***Qualified Staff***: staffing and training of staff are appropriate to the practices being implemented. For example, if the program attempts to teach in Spanish, the teachers are bilingual in Spanish.

The final criterion relates to the school's *appropriateness* for a national study.

6. ***Generalizability***: insights gained from studying the practices in place at selected school will be useful to other schools. In practice, this meant that the school serves students who are fairly typical of LEP students nationally, and has no special circumstance that makes it so unique that other schools cannot learn from their experience.

Sites were also selected that fit geographic and programmatic diversity. Of the 156 nominated sites, approximately 60 percent were language arts sites and the remaining 40 percent were mathematics and/or science sites. The sites contacted were closer to 50 percent language

arts and 50 percent science and/or mathematics. Finally, some schools had multiple nominations and those sites were included in the next stage.

Telephone Screening. Seventy-five candidate sites were chosen for additional contact based on the criteria just described. Telephone interviews were conducting using an instrument designed to capture basic demographic data on the school, a description of the program, staffing, evaluation, funding sources, and indicators of how the school would meet the selection criteria. Staff members called the district and school, interviewed either the principal or lead teacher for the program, and requested any additional written documentation on the program. When possible, additional informants from universities, training entities, or other sources were used to gather another perspective on the site.

Staff held a one to one-and-one-half hour conversation with the principal or site coordinator at each of the 75 candidate schools. The results of the phone interviews were to reduce further the number of sites that had potential for further study. The telephone screening process yielded 25 potential fieldwork sites.

Screening Visits. From the pool of 25 promising sites, demographic, geographic, and programmatic variables were used to select 15 sites for a one-day preliminary site visit to determine which programs would become the final case study sites. One-day visits by one to two fieldworkers to each of the 15 sites were designed to provide the research team with information that would allow the selection of six to ten case study sites that best met study criteria. Prior to the visit, the study team had a great deal of information on the 15 fieldwork sites gathered from reports and articles, telephone interviews with informed experts, and site personnel.

During the preliminary visits, fieldwork staff interviewed persons in responsible administrative positions at the district level and the site level as well as resource teacher(s), and classroom teachers. Classes were observed in the relevant curricular areas. The issues briefly explored in the preliminary visits include:

1. The design of the program: the purpose of the reform, the program's conceptual framework, curriculum, instructional strategies, materials, grouping strategies, and the role of research and research-based information in the design of the program.
2. Implementation of the program: the forces and factors which influenced reform, program organization, staffing, and school climate.
3. Impact of the program: evidence of improvements in student learning and previous program evaluations.

In this way we selected of the eight schools which we revisited for more intensive field work. It was impossible to find data on student outcomes that are comparable across the sites, particularly because LEP students are often not given the standardized tests (in English) that districts or states require of most students.[2] Therefore, we can not demonstrate quantitatively that the eight case study sites are exemplary in the sense of evidence of significantly higher student achievement scores. Nevertheless, the nomination, screening, and field visits all led to the conclusion that these schools are highly innovative and follow practices that are considered by researchers to provide outstanding learning opportunities for LEP and all students.

Selected Sites. The eight sites chosen for intensive fieldwork represent diversity in geographic location, grade level structure, and native language of LEP students. Elementary schools included Del Norte Heights Elementary School in Ysleta Independent School District, Texas, Linda Vista Elementary School in San Diego Unified School District, California, and Hollibrook Elementary School in Spring Branch Independent School District, Texas. K through 8 schools included Inter-American School, Chicago, Illinois, and Graham and Parks Alternative School, Cambridge, Massachusetts. Middle Schools included Horace Mann Middle School, San Francisco, California, Hanshaw Middle School, Modesto, California and Wiggs Middle School in El Paso Independent School District, Texas.

The schools were located in four states. Three schools were in California, one was in Massachusetts, one was in Illinois and three schools were in Texas. The languages represented in the LEP student populations included Spanish at three elementary schools, one K-8 school and all three middle schools. Haitian Creole speakers were served in one K-8 school. One middle school included both Spanish and Cantonese speakers. And one elementary school had students speaking a variety of South East Asian languages as well as Spanish. The table below shows the demographic characteristics of the eight exemplary sites.

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[2] P. Berman et al., *Meeting the Challenge of Language Diversity: An Evaluation of Programs for Pupils with Limited Proficiency in English*, 5 vols. (Berkeley, CA: BW Associates, February 1992).

Table F-2
Demographic Conditions at the Elementary Grade Case Study Sites

CHARACTERISTIC	DEL NORTE	HOLLIBROOK	INTER-AMERICAN	LINDA VISTA
Community Context	Border community, port of entry.	Low-income, largely blue collar and laborers, high-income district	Inner-city magnet school drawing from a variety of neighborhoods	Inner city, port of entry, low income.
Grade Span	K-6	preK-5	pre K-8	pre K-6
Total Enrollment	650	1000	650	950
Ethnicities (%)	Hispanic (91.8%) African American (4.5%) White (3.7%)	Hispanic (85%) White (12%)	Hispanic (69%) White (17%) African American (13%)	Southeast Asian (44%) Hispanic (38%) White (7%) African American (5%)
% LEP	40%	67%	36%	66%
Languages (% of LEP Students)	Spanish (100%)	Spanish (100%)	Spanish (100%)	Spanish (50%) Hmong (22%) Vietnamese (16%) Lao (6%)
% Eligible for Free or Reduced-Price Lunch	85%	87% (Economically Disadvantaged)	56%	88%
Background of LEP Students	An estimated 6% of LEP students are recent immigrants; the majority of the remaining students are born in the US. LEP students are typically from homes where only Spanish is spoken. Most late arrivals are literate in Spanish.	Most families are first generation immigrants; the children are born here to Mexican parents.	Some entering LEP students were born in the US, but most are recent immigrants. Approximately 30% are from Mexico, 25% are from Puerto Rico; 5% are from Cuba, and 27% percent are from other Latin American countries.	Some entering LEP students were born in the US, but most are recent immigrants: either political or economic refugees
Actual Attendance	96.7%	97.2% (1992-93)	95% (1992-93)	95.8%
Transiency/Mobility	Very stable	Medium to high mobility (30%)	Stable (11.3%, 1992-93)	Medium to high mobility

Table F-3
Demographic Conditions at the Middle Grade Case Study Sites

CHARACTERISTIC	GRAHAM AND PARKS	HANSHAW	HORACE MANN	WIGGS
Community Context	Magnet school in urban, but not impoverished setting	Low-income, agricultural and service oriented economy, high unemployment, gangs	Inner-city magnet school—mostly low income with growing middle class population	Port of entry, border community, mostly low- income
Grade Span	K-8	7-8	6-8	6-8
Total Enrollment	365	860	650	975
Ethnicities (%)	White Haitian	Hispanic (56%) White (26%) Asian (11%) African American (5%)	Hispanic (38%) White (20%) Chinese (14%) African American (9%) Filipino (6%)	Hispanic (89%) White (10%)
% LEP	25%	29%	24%	28%
Languages (% of LEP Students)	Haitian Creole (100%)	Spanish (79%) Cambodian (10%) Lao (5%) Hmong (3%)	Spanish (63%) Cantonese (23%) Other Chinese (7%)	Spanish (100%)
% Eligible for Free or Reduced-Fee Lunch	50%	94%	15% (Free Lunch only)	73% (Economically Disadvantaged)
Background of LEP Students	Political refugees from Haiti	Mostly immigrants, some born in US; many children of migrant workers	Mostly immigrants from Mexico, Central America, and China; some born in US	Immigrants from Mexico; a few may have been born in US
Attendance		93.4%	95.6%	95.3%
Transiency/Mobility	Stable, except for new Haitian immigrants	High mobility	Very stable, trickle of new immigrants enter during the year	Medium mobility, new immigrants enter throughout the year

Data Collection

Intensive case study visits were conducted at eight sites; each of these sites were visited during the spring and summer of 1994. The intensive visits took place for three to four days with two to three team members per site. Research staff conducted interviews at the school, district and state level, as well as with external partners; led focus group discussions with students and parents at the study schools; and observed classrooms.

Five team members compose the fieldwork team: Catherine Minicucci, Beryl Nelson and Katrina Woodworth. Paul Berman participated in two case study visits and Barry McLaughlin participated in one case study visit. At least one of the three senior researchers (Berman, Minicucci, and Nelson) visited each site and they were joined by at least one additional staff member. Spanish language classroom observation was performed by Katrina Woodworth. She also conducted focus groups in Spanish in order to gain better access to LEP students and their parents. A Creole-speaking observer, Faith Conant, was hired to observe the Haitian Creole classroom at Graham and Parks School. She was trained by study team members prior to the actual observation.

Table E-4 displays the school and district personnel interviewed on site as well as the approximate length of each interview.

Preparation for Case Study Visits. Prior to conducting case study visits, the research team piloted the instruments and protocols in a school environment similar to those to be studied. The team met to discuss the instruments and potential difficulties in administration. The coding of the classroom observations for the case study visits required more extensive training. The observers/coders were members of the fieldwork team, who were trained on the classroom observation techniques. They observed videos of classroom interactions as they learned the coding scheme. Two observers coded the same class lessons in different subject areas and then compared the results to achieve uniformity in approach. In addition, fieldworkers reviewed written materials on the school's program provided by in advance, interview notes from previous contact with the site, and relevant literature.

Classroom Observation. Classroom observations were conducted at the eight exemplary sites. The procedure for observing classes consisted of a pre-interview with the teacher, the observation itself which lasted from 45 minutes to 1 hour and a half, and a post-observation interview with the teacher.

The pre-observation interview with the teacher was used as an opportunity for the fieldworker to learn what would be taught during the class period. The number of students enrolled, the number of LEP students, the subject being taught, the goals of the lesson, how students would be organized for instruction, what activities had preceded this lesson were obtained.

Table F-4
Case Study Data Collection Sources

Category	Number	Participants	Length of Interview
1. Interviews	14		
a. District level	5	• Asst. Superintendent • Director of Curriculum • Director of Second Language Program • Evaluation Director • Business Officer	• 45 minutes • 45 minutes • 1 hour • 30 minutes • 30 minutes
b. External Agency	1	• Staff of agency assisting the school	• 2 hours
c. School	8	• Principal • 6 Teachers • Support Staff such as Counselor	• 1.5 hours • 30 minutes • 30 minutes
2. Focus Groups	3	• 1 Parent Focus Group • 2 Student Focus Groups	• 30 minutes • 20 minutes
3. Observations	8	• 4 Teachers	• 1 hour • 2 consecutive days

The classroom observation examined how the instructional model is applied in practice in the classroom. The observation was coded into instructional segments. The segments followed the natural organization of the lesson and were divided up into how the students were grouped for instruction. For example, if a class lesson were going to consist of whole class discussion, followed by cooperative learning, followed by whole class discussion, this lesson would be coded as three segments. In most cases, two observers were present to record their observations of the class. Separate cooperative groups were coded as separate segments.

The items coded included:

1. How the class was organized for instruction for each activity?
2. What was the main task or activity being undertaken?
3. How is the primary language used and how is English used by students and teachers?
4. How is technology used in the lesson?
5. How does the teacher manage the classroom?
6. What materials are being used?
7. What is the role of the teacher, whether directive, facilitative, or some other role?
8. What is the role of the student, whether receiving knowledge, active in teacher led discussion or students working independently or presenting information?
9. What is the nature of the instructional script?
10. What is the level of student participation?

After the observation, a post-interview was held with the teacher to follow up on issues noted during the observation. Team members would inquire as to why a teacher structured a lesson in a certain way, or asked a student to perform a certain learning activity. These interviews were extremely valuable at providing deeper insight into classroom instructional practices.

Observation notes were coded using a common format. They were incorporated into fieldnotes and summaries prepared by the study team.

Interviews. Interviews were conducted with individuals at the district and school level, as well as appropriate individuals in the external portion training institutions or intermediate units which had a direct role in the design, implementation, or evaluation of the program.

At the school site, one on one interviews were conducted with the principal, teachers (in addition to interviews relating to the observation of instruction), social workers, counselors, community/parent

liaisons, and nurses on school sites. Interviews were informal with questions asked of multiple informants. Results of interviews were compiled into field notes.

At the district level, one on one interviews were conducted with the assistant superintendent, the second language program director, the curriculum director, the evaluation director, and a business officer.

Personal interviews were conducted with the state director of second language programs when possible; when logistically impossible, a phone interview replaced the in-person interview.

External partners working with the school were interviewed at their office locations away from the school site.

Focus Group Discussions. Two types of focus groups were conducted on site. The first was with students. Teachers were asked to assemble a group of 5 to 8 LEP students who had made significant progress in transitioning to English during the school year. Those students were taken to a quiet location away from the classroom and asked some open ended questions about their experience at the school and what helped them learn science, mathematics, and English. The focus group was conducted in English or the primary language of students, depending on their fluency level.

The second type of focus group was with parents of LEP students. School staff assembled parents in small groups for discussion. These groups were conducted mainly in the parents' primary language.

Results of the focus groups were compiled in fieldnotes and summaries.

Documentation. Researchers gathered previously conducted program evaluations; data on student demographics, attendance, and achievement; and data on school resources.

Data Analysis

Fieldnotes and Summaries. Upon completion of fieldwork at a site, team members compiled their notes separately. One person was designated as lead person to assemble a comprehensive site summary including background on the school, the principal interview, the district interviews, the teacher interviews and classroom observations. Study team meetings reviewed the site summaries, involving all members of the fieldwork team to explore findings in the research. Discrepancies and conflicts in findings were discussed and resolved. If necessary, follow up phone calls were made to the sites to resolve remaining questions about the school's program.

Case Studies. Fieldwork site summaries became the basis for the case study summaries prepared for *Volume II: Case Studies.* The Case Studies begin with a description of the school demographics and the community context. Next, they portray a scene from one or more exemplary learning

environments. The remainder of each Case Study focuses on the exemplary aspects of the schools' curriculum and instruction strategies, the program for LEP students, and the school structure. Finally, the Case Studies identify programs and policies at the district and state level that support the implementation of exemplary practices. Each Case Study includes two figures. The first one illustrates key instruction and curriculum features and the design of the language development program for LEP students. The second figure depicts significant features of the school structure and ways in which the district supports the school. Each school's Case Study was submitted to the school's principal (and in some cases a lead teacher) for review and permission to use the school's. In all cases, schools agreed to have their name published in the reports to OERI.

Cross-Site Analysis. Once the case study volume was completed and submitted to OERI and participating sites for review, the team set about preparing the cross-site analysis. The research team prepared matrices for each of the five Case Study Research Areas: 1) The Context for Reform; 2) The Design and Implemntation of the Reform (including restructuring, curriculum and instruction, and language development programs); 3) The Role of Research-based Information in the Reform, 4) Resources Required for the Reform, and 5) Impact of the Reform. The eight case study sites were described in terms of each of the Operational Elements for Data Collection (see Tables E-5 through E-9) for each of the five Case Study Research Areas. These tables are included as an Appendix to *Volume I: Findings and Conclusions*.

The next step of the cross-site analysis was to develop tables with the key features at each school that surfaced in the process of writing the *Case Studies*. As mentioned above, each of these features was highlighted on two figures presented in the *Case Studies*. The tables focused on the key features in two areas: 1) curriculum and instruction, and 2) school structure. This process allowed the researchers to identify strategies that were common across sites or unique to a particular site. Based on these tables, strategies that were used at multiple sites (i.e., integrated curriculum and schools-within-schools) were identified and more tables were created to illustrate the variety of ways that schools at a given site implemented a particular strategy. (For example, schools integrated curriculum using a variety of strategies including project-based learning and thematic units taught by a team of teachers.)

External support from an external partner, the district, and the state was analyzed through a similar process of identifying approaches, programs, and policies that were common across the exemplary sites or unique to a particular site. The study team focused on policies that directly and positively impacted the case study schools.

The results of the cross-site analysis are presented as the study findings in *Volume I: Findings and Conclusions*.